

Capability Set 13

New Army network reaches the field

By Claire Heininger

After two years of Soldier-driven doctrinal development, evaluation and integration, the Army is delivering its new tactical communications network to select Brigade Combat Teams, introducing both critical technology upgrades and a deliberate approach to how units are equipped with the network.

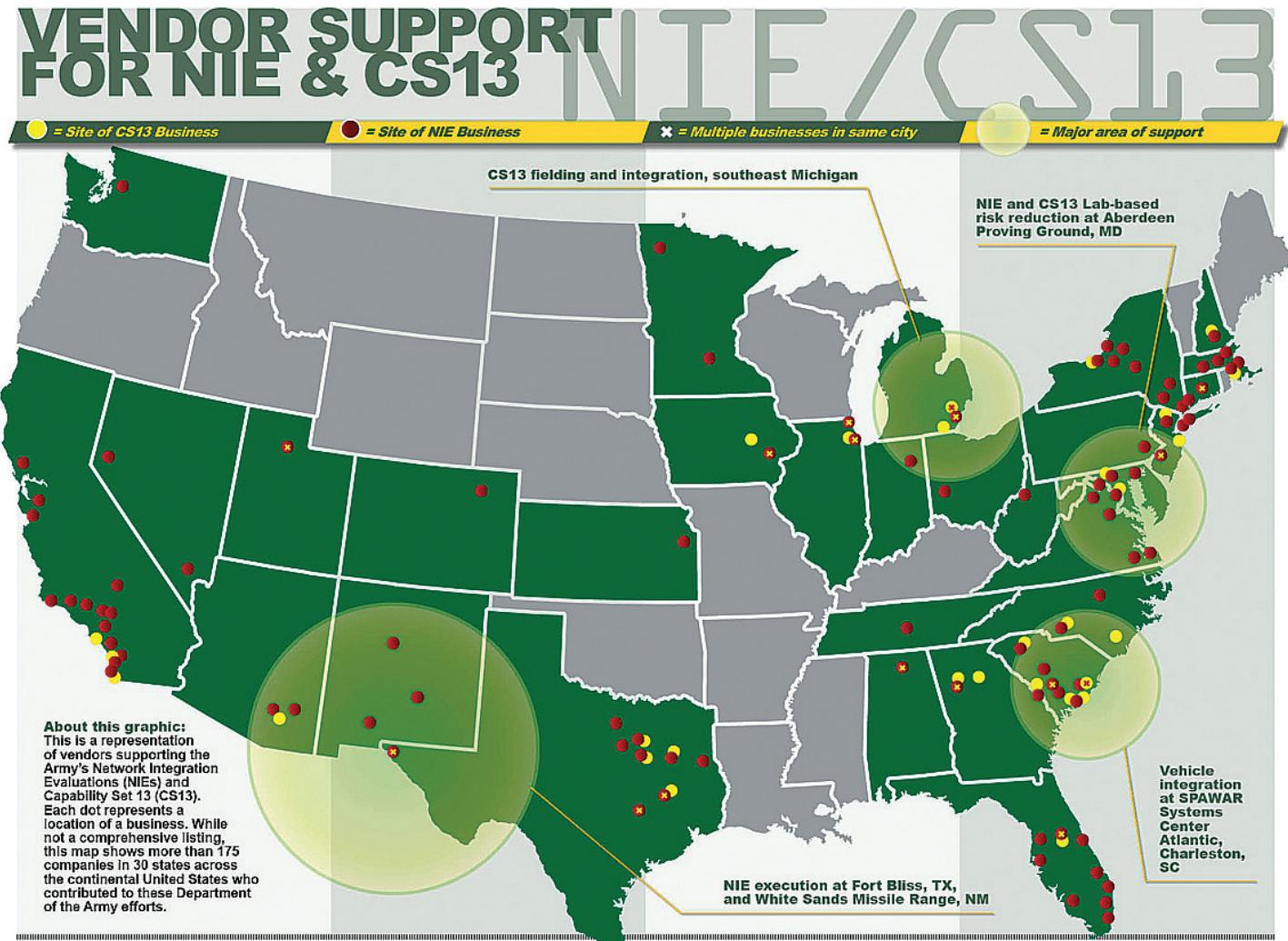
Soldiers from the 10th Mountain Division's 3rd BCT at Fort Drum, N.Y., and 4th BCT at Fort Polk, La., were the first to receive Capability Set 13, which began fielding in October 2012. The 4th BCT, 4th Infantry Division at Fort Carson, Colo., will be

the next to get the new gear starting early in 2013.

Through mobile communications technology that connects all echelons of a brigade combat team down to the dismounted Soldier, the Capability Set 13 network will reduce units' reliance on fixed infrastructure, extend the range of communications and improve battlefield awareness at the lowest levels.

"This capability will allow us to remain mobile and will not tie us to fixed facilities," said COL Walter E. Piatt, deputy commanding general for support of the 10th Mountain Division.

"This capability changes the equation, and gives us situational awareness where we need to



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> COMMANDERS REQUIREMENT BY ECHELON

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19 JUNE 2010

THE NETWORK IS AN ENabler FOR JUST ABOUT EVERYTHING YOU'RE DOING." COL. JOHN MORRISON, DIRECTOR OF THE LAND WAR NET-BATTLE COMMAND DIRECTORATE		SOLDIER	TM LDR	SQD LDR	PLT LDR / SGT	CO CDR	CO TOC	BN CDR	BN TOC
MCEC REQUIREMENTS*	Voice, PLI (one way, up)	Voice, PLI, SA	Voice, PLI, SA, C2	Voice, PLI, SA, C2, maps & control graphics, orders, SITREPs		Voice, PLI, SA, C2, maps & graphics, orders, SITREPs, sensor data, video	Voice, PLI, C2, SA, maps & graphics, orders, SITREPs, whiteboard, sensor data, video	Voice, PLI, C2, SA, maps & graphics, orders, SITREPs, whiteboard, sensor data, video	Voice, PLI, SA, maps & graphics, orders, SITREPs, whiteboard, sensor data, video
CONNECT TO	Soldier, TL	Soldier, TL, SL, PL	Soldier, TL, SL, PL	Soldier, TL, SL, Co Cdr		Plt Ldrs, Co TOC, Bn Cdr/TOC, Fires, Log Spt, JIM	Plt Ldrs, Co Cdr, Bn Cdr/TOC, Fires, Log Spt, JIM	Co Cdr/TOCs, Bn TOC, Bde Cdr/TOC, Fires, Log Spt, JIM	Co Cdr/TOCs, Bde Cdr/TOC, Fires, Log Spt, JIM
NETWORK REQUIREMENTS	FM voice and GPS (15 kbps/2 mbps)	FM voice, GPS, data (15 kbps/2 mbps)	FM voice, GPS, data (15 kbps/2 mbps)	FM voice, GPS, data (15 kbps/2 mbps)		Internal/external C2 voice, SIPR, video, sensor links (1.2 mbps/2+4 mbps)	Internal/external C2 voice, SIPR, NIPR, VoIP, video, sensor links (1.2 mbps/2+4 mbps)	Internal/external C2 voice, SIPR, video, sensor links (>4 mbps)	Internal/external C2 voice, SIPR, NIPR, VoIP, video, sensor links (>4 mbps)
NETWORK EQUIPMENT	Rifleman Radio	Nett Warrior	Nett Warrior	Nett Warrior, HMS MP, MBITRS		WIN-T: SNE/Mobile PoP, JTRS: MNVR, HMS MP, Nett Warrior, JCR/JBC-P BFT2	MC Systems JTRS: MNVR, HMS MP, Req: ATH WIN-T PoP/COTS	WIN-T: Mobile PoP, MC Systems, Nett Warrior JTRS: MNVR, HMS MP, JCR/JBC-P BFT2	WIN-T Inc 2 /SMART-TI GBS/Trojan Spirit/CSS VSAT/MCPAO-NET/ TRC-190 (via) JCR/ SINGARS JBC/PSC TACSAT/HF Radio/JTRS

have it and turn it against the enemy."

As U.S. forces continue to draw down in Afghanistan, they will turn over many of their Forward Operating Bases and other infrastructure to the local forces, thus gradually losing fixed network locations. Capability Set 13 systems provide mobile satellite and robust radio capability for commanders and Soldiers to take the network with them in vehicles and while dismounted as they conduct security assistance and some combat missions. Leaders say that ability would prove critical when the brigades are called on to deploy.

"As I look at upcoming missions, our ability and my ability to communicate with those Soldiers on the ground over extended distances – that's really what will give us the edge as we go forward," said COL Sam Whitehurst, commander of the 3rd BCT, 10th Mountain Division.

Capability Set 13 is the Army's first fully-integrated package of radios, satellite systems, software applications, Smartphone-like devices and other network components that spans

the entire brigade combat team formation, connecting the static tactical operations center to the commander on-the-move to the dismounted Soldier. It directly addresses 11 critical operational needs statements submitted by combatant commanders and offers U.S. forces vastly increased capabilities to communicate and share information.

"When you look at the communications architecture that now is able to rapidly process not just voice communications, but data communications from the brigade to the battalion down to the company level, it increases your ability to conduct mission command in a complex environment with changing situations more effectively," said COL Thomas Dorame, commander of the 2nd BCT, 1st Armored Division (2/1 AD), the brigade that validated CS 13 prior to fielding. "If you have Soldiers in contact or you have a developing situation, you have better situational awareness (with) which to make decisions, and as you make decisions, you can communicate those decisions faster and clearer to the lowest level."

CS 13 not only introduces new technologies, but also represents a new approach to how the Army equips units with the network. For the first time, the Army is fielding network systems not on an individual basis, but as an integrated communications package for the BCT. That requires a new, highly synchronized approach to production and deliveries of CS 13 equipment. New equipment fielding and training for different systems have been synchronized with one another and with the units' other pre-deployment requirements and exercises.

"We're bringing all of the individual systems together, synchronizing them, and fielding them together as a capability package to give to the unit," said COL Rob Carpenter, Army director of System of Systems Integration. "Up front, we make sure this equipment is usable, trainable, and sustainable so we don't put gear out there we don't need, and we don't leave the integration to the commanders and

(Continued on page 22)

(Continued from page 21)

Soldiers in the field."

Before delivery to CS 13 units, the capability set was validated through the Network Integration Evaluations, a series of semi-annual events that leverage 2/1 AD conducting rigorous mission scenarios in a realistic operational environment at Fort Bliss, Texas, and White Sands Missile Range, N.M.

"The NIE is a tough environment - we see integration problems that we haven't seen before," said MG Genaro Dellarocco, commander of the Army Test and Evaluation Command, which along with SoSI and the Brigade Modernization Command forms a "Triad" of organizations that execute the NIEs. "The beauty of this is we're shaking off these systems stateside, not on the battlefield."

NIEs have not only allowed for Soldier-driven evaluations and assessments of network technologies, they have also aided the Army in development of Tactics, Techniques and Procedures for using Capability Set 13. Lessons learned from the NIEs have been applied as the Army works to field, train and sustain the Capability Set, and feedback from the 10th Mountain Division and 4th Infantry Division will also help the process evolve for future brigades.

By using the NIEs to establish an integrated network baseline and to inform training, techniques and procedures, the Army can also rapidly incorporate new technology and adapt it based on different mission requirements.

"We're able to give (receiving brigades) some insights about what worked and what didn't through trial and error," said LTC Andy Morgado, G3 with BMC. "The goal is to get better every time. So CS 13 is going to the Army with clear strengths, because we made the decision that we're

better fighting with it than without it, but there are still certain limitations to the systems that we're going to refine and improve upon, which will be CS 14 and forward."

CS 13 is on track to field to select Infantry Brigade Combat Teams (with priority to units deploying or preparing to deploy to Operation Enduring Freedom and a forward stationed brigade in Korea) from 2012-2013. CS 14, the next iteration, is targeted for fielding to Stryker BCTs beginning in 2014.

In the meantime, as the first CS 13 units rotate out of OEF, other units will fall in on that equipment in theater, including the mine resistant ambush protected vehicles equipped with mobile communications technologies. The Army is also installing CS 13 systems onto High Mobility Multipurpose Wheeled Vehicle platforms that will be used as training sets by continental U.S. units as they prepare to deploy.

Leaders say the NIE and Capability Set construct will continue to evolve, but will form the foundation for how the Army delivers the tactical communications network in the future.

"This is an enduring process," said COL Mark Elliott, director of the Army G-3/5/7 Landwar-net-Mission Command Directorate. "It allows us to look at requirements coming out of theater from a doctrinal perspective, all the way down to the training and operational perspective, to how the unit is going to integrate it. That will be our iterative process that we'll go through."

Claire Heininger is a staff writer for Symbolic Systems, Inc. supporting the U.S. Army Program Executive Office Command, Control and Communications-Tactical. She is a graduate of the University of Notre Dame and a former Statehouse reporter for The Star-Ledger, New Jersey's largest newspaper.

ACRONYM QuickScan

10th Mountain - 10th Mountain Division

2/1 AD - 2nd Brigade, 1st Armored Division

ATEC - Army Test and Evaluation Command

BCT - Brigade Combat Team

BMC - Brigade Modernization

Command

CONUS - Continental United States

CS - Capability Set

HMMWV - High Mobility Multipurpose Wheeled Vehicle

MRAP - Mine Resistant Ambush Protected Vehicle

NIE - Network Integration Evaluation

OEF - Operation Enduring Freedom

SoSI - System of Systems Integration Directorate

TTPs - Tactics, Techniques and Procedures